CLAIMS

We claim:

1. A blind, adaptive equalizer comprising:

   a tracking generator, wherein the generator comprises,

   a smoothing filter for receiving a tap coefficient error estimate of a data stream and for generating a smoothed error from the estimate; and

   a tracking unit for generating a fractional error from the smoothed error.

2. The equalizer as in claim 1 wherein the tracking generator further generates a reduced error by subtracting the fractional error from a stored smoothed error.

3. The equalizer as in claim 2 wherein the tracking generator further generates a fraction of the reduced error.

4. The equalizer as in claim 1 wherein the tracking generator further generates the smoothed error from the tap coefficient error estimate and a smoothing factor.

5. The equalizer as in claim 1 further comprising a coefficient generator for generating tap coefficients based on the fractional error.

6. The equalizer as in claim 1 further comprising an output unit for generating a converged output signal.

7. The equalizer as in claim 1 wherein the tracking generator further generates the fractional error based on the smoothed error and a coefficient adjustment factor.

8. The equalizer as in claim 7 wherein the adjustment factor is $^{1}/_{256}$.

9. The equalizer as in claim 1 wherein the tracking generator comprises a programmed medium.

10. A method for shortening the convergence time of blind adaptive equalizers comprising:

receiving a tap coefficient error estimate of a data stream;

generating a smoothed error from the estimate; and

generating a fractional error from the smoothed error.

11. The method as in claim 10 further comprising generating a reduced error by subtracting the fractional error from a stored, smoothed error.

12. The method as in claim 11 further comprising generating a fraction of the reduced error.

13. The method as in claim 10 further comprising generating the smoothed error from the tap coefficient error estimate and a smoothing factor.

14. The method as in claim 10 further comprising generating tap coefficients based on the fractional error.

15. The method as in claim 10 further comprising generating a converged output signal.

16. The method as in claim 10 further comprising generating the fractional error based on the smoothed error and a coefficient adjustment factor.

17. The method as in claim 16 wherein the adjustment factor is $^{1}/_{256}$.